

## RESPONSE TO OFFICE ACTION

**January 28, 2008**

Application No. 10/798,004      Examiner: Luong T. Nguyen      Art Unit: 2622

Title: A video camera utilizing sequential diversity imaging for image clarification

Inventor: Robert A. Gonsalves      Filed: 12 March, 2004

( Customer No. 76312      Confirmation No. 5175 )

This is a Response to the Office Action filed by Examiner Luong T. Nguyen, Art Unit 2622, dated 30 October, 2007.

The Response has four components, in addition to this cover page.

1. Remarks by the Inventor
2. Clean copy of the Amended Specification, Claims, and Abstract.
3. Affidavit from Gordon D. Love, first inventor of US Patent 6,107,617, entitled, "Liquid crystal active optics correction for large space based optical systems."
4. Marked-up copy of the application as it was filed on 12 March, 2003 with the additions and deletions for this Response.

Respectfully submitted:

/ Robert A. Gonsalves /

January 28, 2008

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Date

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## Remarks by the Inventor

### Remarks concerning the Claim Objections

With reference to the subject Office Action, these remarks follow the numbering of the Detailed Action.

1. The term “AO device” in the claims has been changed to “adaptive optic device” .

The term “said medium” in the claims has been changed to “said optical medium” .

Claims 5, 6, 7, and 8, are deleted.

- 2, 3. The specification has been modified such that the subject matter in claims 1, 2, and 3 is more clearly described to allow one skilled in the art to use the invention.

In particular, the description of Figure 1 states that the lens and adaptive optic device allows the optical energy received by the aperture to be focused, as an optic signal, onto the detector array, which is in the focal plane of the lens. References are made to a publication and a patent which describe this conventional use of an adaptive optic device. The specification also states that the detector converts the optical energy in the focal plane into sequential in-focus digital images.

In another particular the modified description of Figure 1 makes clear that the adaptive optic device receives optical energy from the lens and passes it on to the detector; and that the adaptive optic device receives digital control signals only from the sequential diversity processor.

In a final particular the modified description of Figure 1 makes clear that the sequential diversity processor receives digital, in-focus images from the output of the video camera and produces digital control signals which are sent to the adaptive optic device.

- 4, 5. Claims 5, 6, and 8 are deleted.

- 6, 7. Claims 4, 7, and 9 were rejected as being anticipated by Love et al. (US 6,107,617). Love et al. presents an improvement on the method of “Phase Diversity.” This method was introduced in US 4,309,602 and the method uses an in-focus image and an out-of-focus image of an object,

plus a fixed diversity between the two, to estimate both the object and the aberrations which distort an image of the object.

Love et.al uses both an in-focus image and an out-of-focus image and they are identified as such in Figures 1 and 3 of US 6,107,617. Love et.al also uses a fixed diversity which is introduced by the spacer in the beam-splitter shown in Figures 1 and 3 of US 6,107,617.

The present Application does not use an out-of-focus image and does not used a fixed amount of diversity. This distinction was disclosed in the original specification but it was not emphasized. It is now emphasized at several points in the Amended Specification, Claims, and Abstract.

Also, we have attached an Affidavit from Gordon Love, the first Inventor of US 6,107,617. The affidavit states that he believes that Claims 4, 7, and 9 are not anticipated by US 6,107,617, and he gives his reasons.

The Inventor of the present Application retains possession of the original Affidavit and he will submit it to the USPTO if necessary.

Finally, the revised Claims for the present Application delete Claims 7 and 9. Claim 4 states, explicitly, that the invention requires no auxiliary equipment or signal, like an intentionally defocused image

#### Remark concerning the first sentence of the Specification

The Inventor has, today, filed a Petition to claim benefit of an earlier filing date. One requirement of that petition is to include a reference to the earlier patent application in the first sentence of the current Application. The statement is included to fulfill that requirement, with the understanding that it will be retained only if the Petition is granted.